

ASTHMA IN MISSOURI SCHOOLS

ASTHMA IN CHILDREN

- Asthma is the most common chronic disorder to affect children in the United States¹
- In Missouri, asthma was the leading cause of both emergency department visits and inpatient hospitalizations among children under age 15 due to a chronic condition²
- Childhood asthma prevalence in Missouri was 8% in 2004 – prevalence was slightly higher among children 5 to 17 years of age, at 8.7%³

SCHOOL ABSENTEEISM

- Nationally, asthma is the leading cause of school absenteeism due to a chronic condition¹
- The Asthma and Allergy Foundation of America estimates that children with asthma miss an average of 8 days of school each year due to their asthma¹
 - According to 2004 estimates, approximately 88,000 children 5 to 17 years of age have asthma³
 - Potentially, over 700,000 school days are missed per year among Missouri children due to their asthma

SCHOOL HEALTH PROFILE⁵

- The Division of Adolescent and School Health program at the Centers for Disease Control and Prevention has administered the School Health Profile (SHP) in even-numbered years in Missouri since 1994
- The survey is designed to monitor health education and policies in public schools
- The SHP is sent to principals and designated lead health education teachers in a sample of Missouri's public secondary schools
- The data reported in the SHP are on schools themselves
- 2002 Missouri secondary school findings

(Table 1):

- Nearly all of the schools addressed physical activity among students with asthma, which is important because exercise can trigger asthma events in some individuals⁶
- Most schools could identify and track students with asthma (93%) and assure immediate access to approved asthma medications (91%)
- School nurses
 - One of the most important factors for students with asthma is access to a school nurse⁹
 - Table 1 shows that 72% of schools had a full-time registered nurse on staff; this is on par with the national rate of 77%
 - The National Association of School Nurses recommendation is a 750-to-1 ratio, which Missouri surpassed with 593 students for every school nurse ▶

Table 1

Asthma Management Activities in Secondary Schools – Missouri 2002

	Percentage of Schools
Encourage full participation in physical education and physical activity when students with asthma are doing well	97%
Provide modified physical education and physical activities as indicated by student's Asthma Action Plan	95%
Identify and track all students with asthma	93%
Assure immediate access to medications as prescribed by a physician and approved by parents	91%
Provide a full-time registered nurse, all day every day	72%
Obtain and use an Asthma Action Plan for all students with asthma	64%
Educate school staff about asthma	60%
Educate students with asthma about asthma management	56%
Provide intensive case management for students with asthma who are absent 10 or more days per year	38%
Teach asthma awareness to all students in at least one grade	32%
Adapted from Miller & Bihr 2003	

- Asthma Action Plan
 - See Box 1 for more details on Asthma Action Plans
 - Table 1 shows that 64% of secondary schools had an Asthma Action Plan for all students with asthma
 - Nearly 40% of schools intervened when students with asthma missed 10 or more days of school per year by providing intensive case management for those students
- More than half of schools educated school staff and students with asthma about asthma issues
- A third also taught asthma awareness to all students in at least one grade

Box 1

Asthma Action Plan⁶

- Written, easy-to-understand description of how to manage an asthma exacerbation, or attack
- Individualized for each person with asthma
- Outlines basic information
 - Early signs of worsening asthma
 - Steps to take during an asthma episode
 - Medications to use and how to use them
 - When to contact a doctor or visit an emergency department

SCHOOL NURSE SURVEYS

Three school-based surveys have addressed asthma in Missouri schools

- They were carried out with the cooperation of the Missouri Department of Elementary and Secondary Education
- They targeted school nurses as an important source of information on health issues in the school setting
- The surveys are the:
 1. Missouri School Health Services Program (MSHSP) Special Health Care Needs Survey⁷
 2. MSHSP Contractor Survey⁸
 3. University of Missouri Children's Hospital School Nurse Survey on Disabling Asthma^{9,10}
- These surveys differ from the SHP because they collected data at the student level rather than the school level and respondents were school nurses rather than principals or health education teachers

1. MSHSP Special Health Care Needs Survey⁷

- School nurses in all 524 Missouri public school districts were surveyed to collect data on special health care needs among students in kindergarten through grade 12
- Surveys were administered every other school year
- 2002-2003 school year
 - o The response rate was 72%
 - o Nearly 8% of students were reported to have asthma
 - o Nurses categorized about 5% of all students with asthma as having severe asthma
- 2004-2005 school year
 - o The response rate was 90% (an improvement over the previous survey)
 - o About 7% of students were reported to be on asthma medication at home and/or at school

2. MSHSP Contractor Survey⁸

- Additional data were collected on school districts that contracted with the MSHSP
- **2003-2004 school year**
 - School nurses in 233 school districts were surveyed
 - This was 45% of all school districts in the state
 - This represented nearly 260,000 students
 - Nurses reported that about 7% of students had asthma
 - Among students with asthma:
 - 41% received asthma medications while at school
 - About half had asthma that warranted getting an individualized Asthma Action Plan (AAP)-- 88% of these students actually got an AAP (*Box 1*)
- **2004-2005 school year**
 - School nurses in 219 school districts were surveyed
 - This was 42% of all school districts in the state
 - This represented over 260,000 students
 - Nearly 8% of students were reported to have asthma
 - Among students with asthma:
 - 42% received asthma medications while at school
 - About half had asthma that warranted getting an individualized AAP--96% of these students actually got an AAP

Student Self Administration Law⁴

- The Missouri legislature passed Missouri Revised Statute 167.627 in 1996
- The law states that boards of education can permit students with asthma to carry and self administer metered-dose inhalers, provided that the following requirements are met:
 - Parents or guardians provide written authorization for self administration of medications
 - Student medical history is provided
 - An action plan for asthma-related emergencies is on file
 - Parents or guardians provide a statement that waives liability of schools and their staff if harm due to self administration occurs
 - A physician provides a statement that outlines that the student:
 - Needs asthma medication
 - Is capable of self administration
 - Has been informed about proper administration and the dangers of permitting others to use the medication administration

3. University of Missouri Children's Hospital School Nurse Survey on Disabling Asthma^{9,10}

- Researchers at the University of Missouri Children's Hospital have also conducted a study concentrating on Missouri's public schools, this time focusing on asthma in particular⁹
- 1,400 school nurses were surveyed starting in May of 2005
 - Results have been analyzed for 846 of the responses
 - It is estimated that these nurses serve 520,000 of 925,000 public school students in Missouri
- The data were used to identify which schools had the greatest problem with disabling asthma among students¹⁰
 - A child is considered to have disabling asthma if they experience long-term reduction in their usual activities (attending school, playing) due to asthma⁹
 - About a third of the children represented in the survey were from rural areas
 - The median disabling asthma rates among children in rural areas was 1.0%
 - Two-thirds of the children resided in urban areas
 - The median disabling asthma rate for these children was 2.4%
 - These results were comparable to the national rate of disabling asthma (1.4%)⁹

CONCLUSIONS

- Asthma is a significant chronic condition among children. In the United States:
 - Students miss about 400,000 days of school due to asthma each year
 - In a 174-day school year, an average of over 4,000 students are absent each day due to their asthma
 - Many parents miss work due to school absenteeism
- School nurses estimate asthma prevalence surprisingly well
 - According to the Missouri BRFSS, 8.7% of school-aged children are currently living with asthma³, which is comparable to what school nurses reported (7% to 8%)
 - National prevalence of disabling asthma among children is 1.4%⁹, and this is also comparable to rates reported by school nurses (1.0% to 2.4%)
- The SHP reported that Missouri equals or surpasses national recommendations for student access to school nurses
- The Centers for Disease Control and Prevention have established strategies that schools can follow to become "Asthma-Friendly Schools"¹¹
 - The items included in Table 1 shows that Missouri schools are addressing many components that make up an "Asthma-Friendly School," but there may be some room for improvement
 - Asthma Action Plans are an important part of having an "Asthma-Friendly School" -- school nurses report that 88% to 96% of students who needed an Asthma Action Plan received one

RECOMMENDATIONS

- Nurses should continue to be a resource for acquiring information on health issues among children, especially for asthma
- Schools should continue to improve their capacity to create "Asthma-Friendly Schools"
- Interventions should target school nurses to utilize their relationship with students who have asthma

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